Benign and Malignant Prepyloric Lesions of the Stomach

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THE difficulties in diagnosis between benign and malignant ulcerations of the stomach have been appreciated for many years. Recently cases of chronic gastritis simulating carcinoma have been reported. From the standpoint of the general surgeon, ulcerative lesions of the stomach have been considered as being potentially malignant, and subtotal gastric resection has been the treatment of choice. Since the curability of gastric carcinoma has been disappointingly low, it has been suggested that total gastrectomy replace subtotal gastrectomy in the treatment of this type of lesion.[5] During the past four years considerable attention has been focused on the work of Dragstedt and others in the treatment of peptic ulcer by sectioning the vagus nerves either above or below the diaphragm.

During the early stages of this work, only those patients who showed marked excess of free hydrochloric acid, and an excessive amount of nocturnal secretion, were chosen for this procedure. Gradually vagotomy has come to replace subtotal gastric resection in the surgical treatment of peptic ulcer. In June 1946, Dragstedt[2] recommended that this procedure supplant subtotal resection in duodenal, gastrojejunal, and "proven" gastric ulcers. Elsewhere in the literature appear reports of patients with gastric ulcer treated by section of the vagus nerves.[3] In December 1946, Dragstedt spoke in Los Angeles and made the statement that subtotal gastric resection in the treatment of peptic ulcer was to him of historical significance only. This concept is not completely in accord with that of many other surgeons. Vagotomy, combined with gastrojejunostomy when indicated, gives dramatic and may give permanent relief to patients suffering from duodenal, gastrojejunal, and selected gastric ulcers.

The problem of differentiating between benign and malignant lesions of the stomach is complex. Allen[1] in reviewing a series of cases found that 14 per cent of the patients treated as having benign gastric ulcer proved later to have carcinoma of the stomach. He observed that all of these patients responded well to conservative therapy, that the ulceration diminished in size, and that the surrounding area of gastritis disappeared. Palmer[6] proved quite definitely the same fact, that malignant ulcers may heal and become covered by neoplastic mucosa, or by a layer of epithelium which is normal in appearance. As to the differential diagnosis Allen stated that helpful information was derived from an analysis of the location of the lesion, age of the patient, and the duration of symptoms. Gastric analysis, particularly as regards free acidity, and the size of the ulceration were not impressive. The type and radiation of pain, and the rate of healing under conservative therapy were valueless. Ten per cent of the lesions on the lesser curvature and of the pylorus itself, and practically all ulcerations in the immediate two centimeters of stomach proximal to the pylorus proved to be malignant. An interesting fact obtained from Allen's series was that resections done on lesions thought clinically to be benign, and proven by the pathologist to be malignant, lead to an increase in five-year cures from 20 to 40 per cent over clinically malignant lesions.

Pre-operative examination of gastric lesions, including radiographic and gastroscopic studies, gastric analysis, and a careful history often fail to establish the diagnosis. In August 1946, Rennie[7] reported several cases of antral gastritis and carcinoma. In one patient, at the primary operation, a rubbery induration and thickening of the antrum was found. Gastrotomy was performed and a clinical diagnosis of gastritis was made. The gastrotomy was closed, and nothing further was done. Several months later the patient returned with considerable gastric distress and pylorospasm. Laparotomy was again performed and the lesion appeared somewhat the same as before. Gastrotomy was done and it was found that the pylorus was narrowed and almost occluded by a ring of firm tissue. Biopsy of the pyloric ring was taken in two places and was reported as chronic inflammatory tissue. Posterior gastroenterostomy was performed and the gastrotomy closed. Report of paraffin sections showed an infiltrating adenocarcinoma of the pylorus.

The differential diagnosis between prepyloric ulcer, gastritis, and carcinoma cannot definitely be established with our present armamentarium. No single diagnostic procedure, nor the sum of all available, can definitely exclude the diagnosis of carcinoma. In view of the excellent results obtained in duodenal, and in some cases of gastric ulcer, by vagotomy, the surgeon is tempted to do this procedure, plus gastrojejunostomy if pyloric obstruction is present, in lesions of the stomach which are apparently benign. Delay in operation or conservative procedures may be beneficial to patients with benign lesions, but may likewise lead to tragic results if the lesion later proves to be malignant.

CASE REPORT

An Italian housewife, aged 51 years, was first seen on November 21, 1946. She was in good health until about two years previously, when following receipt of a letter from the War Department reporting that her son was missing in a flight over Germany, she began to have intermittent epigastric pain with some nausea and vomiting. This continued at intervals, first once a week and eventually daily. She saw several physicians who attributed her present illness to the fact that she was worrying about her son having been lost in action. One year later a cholecystogram was reported as negative. Epigastric pain continued and was usually relieved by warm milk. During the preceding few months vomiting occurred frequently, and for two weeks nausea was constant. Food or fluids could not be retained.

No history of hematemesis, tarry or clay colored stools, or icterus could be obtained and there had been no weight loss.

Physical examination revealed nothing significant. The value for hemoglobin was 13.8 gm.; leukocytes numbered 6,900. Gastric analysis with alcohol meal revealed no free hydrochloric acid on any of the specimens. There was a trace of occult blood in all specimens.

Radiological examination on December 2nd was reported as follows: "Two gastro-intestinal examinations were made of the stomach, one before and one after heavy sedation. Both of these studies showed a stiff, tubular antrum. The lesion seemed to extend from the pylorus proximally about an inch and a half. It suggests carcinoma of the annular or scirrhous type with marked stiffening and narrowing of the pyloric outlet. The patient carried a large gastric residue at five hours. Gall bladder dye study revealed normal function and no stones. Scout radiographs of the abdomen and gall bladder reveal nothing remarkable."

The patient was admitted to the Hospital of the Good Samaritan on December 14. Her stomach was aspirated and contained 1300 cc. of greenish liquid with no gross evidence of blood. She was placed on continuous gastric suction and fluid and electrolytes were replaced. On December 16 the abdomen was opened through a right paramedian incision. The stomach was small and there was a firm mass palpable on the gastric side of the pylorus which seemed to comprise the anterosuperior wall of the stomach. There was no definite crater palpable. The lesion was smooth and the serosa was not involved. The duodenum was smooth, and no ulcers were palpable or visible. There were numerous soft lymph nodes throughout the gastrocolic and gastrohepatic omentums. The gall bladder was thin walled and compressible. The foramen of Winslow was patent. The remainder of the viscera were normal, including the liver which was small and contained no metastatic nodes. A frozen section of one of the lymph nodes of the mesentery was reported as benign. However, since the lesion was entirely on the gastric side of the pylorus, it was not felt safe to do a vagotomy as malignancy could not be excluded. A posterior Polya-Hofmeister subtotal gastric resection was done.

Examination of the resected stomach showed what appeared to be a shallow prepyloric ulcer, located on the lesser curvature toward the anterior wall with marked thickening and deformity of the adjacent pyloric ring which formed one portion of the ulcer. The distal one-third to one-half of the resected stomach, particularly along the lesser curvature, showed marked roughening and focal thickening of the mucosa. In some areas there was apparent atrophy. Impression at this time was that of a chronic prepyloric ulcer of the stomach and chronic gastritis.

Pathological Report: "Diagnosis (1) Chronic peptic prepyloric ulcer of the stomach; (2) Chronic gastritis; (3) Adenocarcinoma of stomach; (4) Adenocarcinoma, metastatic, regional lymph nodes. Comment: The malignancy appears to be arising in an area of pre-existing gastritis or perhaps healing gastric ulcer. There is no evidence in the sections of malignancy beyond the mucosa."

Postoperatively the patient developed partial retention, due apparently to edema at the stoma which responded to conservative therapy, and at the end of a week postoperatively she was tolerating food and fluids with no difficulty. Her wound healed by primary intention and she was discharged from the hospital on December 28.

COMMENT

In summary of this case the following facts stand out:

1. Symptoms of indigestion of over two years' duration were very suggestive of peptic ulcer as the onset came following a psychic upset and there was relief of pain with food.

2. Gastric analysis showed an absence of free hydrochloric acid which is not uncommonly seen in individuals over 50 years of age, and in patients with peptic ulcer with either pyloric stenosis or gastritis.

3. X-ray evidence was that of carcinoma, but similar findings occur in cases of gastritis.

4. Biopsy of a regional lymph node showed inflammatory reaction only.

5. Operative findings including biopsy of a regional lymph node did not definitely establish the diagnosis.

In view of the present feeling toward surgical treatment of peptic ulcer, during surgery the question arose as to whether gastrotomy with biopsy and frozen section should be used to establish the diagnosis. It is probable that sections taken through the ulcer would have failed to establish the diagnosis of malignancy, and in view of the case reported by Rennie[7] the futility of this procedure is evident.

It is factual that some surgeons are contemplating vagotomy in lieu of subtotal gastrectomy in cases of gastric ulcer. Jones[4] stated that while he was operating on a case of gastric ulcer before a large group of surgeons, 80 per cent of them stated they thought that vagotomy alone should be done. The resected stomach from his case also proved to be malignant.

SUMMARY

The difficulty in diagnosis between benign and malignant lesions of the stomach has been discussed. The most frequent source of error is undoubtedly in lesions in the prepyloric area. Frequently an accurate diagnosis can be made only from paraffin blocks of the resected specimen. As pointed out radical surgery for carcinoma of the stomach is becoming more popular.

In view of these facts, vagus section or any other palliative procedure for prepyloric gastric lesions should be condemned. Although it may effect a cure in some cases of benign ulceration of the stomach, it may also lead to tragic consequences.

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